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10/678,068	10/06/2003	Kwang-Deok Seo	P--0557	4081

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EXAMINER	
SAWAGED, SARI S	

ART UNIT	PAPER NUMBER
2623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/678,068	SEO, KWANG-DEOK	
	Examiner	Art Unit	
	SARI SAWAGED	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal et al. (hereinafter referred to as Agarwal) (US Pat 6,314,466) in view of Aksu et al. (hereinafter referred to as Aksu) (WO 03/028293).

Claim 1:

Agarwal discloses a network video streaming apparatus comprising:

a memory configured to store content files received from a transmitting server (Col. 8 lines 28-40 and Col. 13 lines 40-48; Agarwal discloses a pre roll buffer that is configured to store content files received from a transmitting server); and a random access searching unit configured to search a random access point in the memory, and to transmit a content file request message to the transmitting server if the random access point does not exist in the memory (see Col. 3 lines 9-15 and Col. 8 lines 40-43; Agarwal discloses that his invention allows a user to "seek" or "jump" (random access point request) Agarwal also discloses that the client computer MAY require more data for the presentation than has been

transmitted by the server (the examiner understands this to mean that if the requested jump point is not in the pre roll buffer, sending a request to the server for the requested data starting at that jump point. If the requested jump point is in the buffer then sending a request for only the requested data that is not in the buffer).

Agarwal discloses that the video streaming occurs over a network. Agarwal doesn't specifically disclose that the network is HTTP based. Aksu, an inventor from the same or a similar field, discloses an HTTP video streaming network with a client/server (see page 1 lines 30-36, page 2 lines 16-18, page 7 lines 17-18). Aksu's disclosure is used to merely convey that HTTP-based video streaming via a mobile communications network was known at the time and that the "network" disclosed by Agarwal does not exclude the internet, HTTP-based video streaming, or mobile communications networks. It would have been obvious to one of ordinary skill at the time the invention was made to modify the invention of Agarwal with the HTTP-Based streaming method of Aksu because it would have made it possible for consumer to stream video over the internet without incurring the cost and time associated with setting up a separate dedicated network to stream video to clients/other users.

Claim 2:

Agarwal and Aksu disclose the apparatus of claim 1 (as discussed previously).

Agarwal discloses further comprising a display unit configured to displaying the files from the random access point stored in the memory (see Col. 2 lines 23-25).

Claim 3:

Agarwal and Aksu disclose the apparatus of claim 1 (as discussed previously). Agarwal discloses the memory as discussed in claim 1 but doesn't state that the memory is a storage disk. Aksu discloses that the client can store data in a storage disk (see Page 3 line 20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Agarwal to store streamed data onto a storage disk because it would have given the client more flexibility/choices in storing streamed data. Storage disks can also be erased and rewritten to, therefore, would have been a cost efficient memory to use as opposed to write once type media.

Claim 4:

Agarwal and Aksu disclose the apparatus of claim 1 (as discussed previously). Agarwal discloses that audio, video, and other multimedia data can be streamed but doesn't specifically disclose storing/streaming fragmented mp4 files. Aksu discloses that mp4 files can be stored/streamed and that the MPEG Group developed fragmented movie files (mp4 files) because the fragmentation of a movie file shortens the length of time that a user has to wait before starting to view the streamed media as opposed to a non fragmented MP4 file (see page 3 lines 11-22 and Page 4 lines 18-34). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify the invention of Agarwal to include mp4 file streaming and fragmentation because it would have given the client the flexibility in being able to download stream of video data (movie, advertisement, etc...) that may have been only available in MP4 format while improving their wait time before viewing because of the advantages of MP4 file fragmentation.

Claim 5:

Agarwal and Aksu disclose the apparatus of claim 4 (as discussed previously). Aksu discloses wherein the mp4 file form comprises:
a plurality of data segments, a representative header associated with a first of a plurality of data segments; and a plurality of segment headers, each associated with remaining ones of the plurality of data segments (see Fig. 5a and page 8 lines 28-29; Aksu discloses that meta-data (moov in a non fragmented file or moov and moof in a fragmented mp4 file) typically appears at the beginning of streaming files as a file header section. Figure 5a shows a representative header labeled "File-level meta-data description part" which is only associated with a first of a plurality of data segments as shown in the figure and a plurality of segment headers labeled "meta data x" where x is the segment number).

Claim 6:

Agarwal and Aksu disclose the apparatus of claim 1 (as discussed previously).

Aksu discloses wherein the transmitting server configures a new data stream based on the random access point requested by the random access searching unit (see page 10 lines 9-14; Aksu discloses that the file-level meta-data (moov) file can be repeated within mp4 file to support live streaming, fast forward or backward operations, random access, and other purposes. If a client requests a file and then the client decides to request a random access point that hasn't been downloaded/buffered, the server can configure a new data stream with the file-level meta data inserted at the random access point so that the user doesn't have to wait for the client computer to download all the data from the original request to the random access point that was chosen to begin viewing from the desired random access point.

Claim 7:

Agarwal discloses a method of providing a network based video stream for a communication system, comprising:

requesting a prescribed content file from a transmitting server when a random access point required by a user is not stored in a local memory; and receiving a data stream from the transmitting server beginning from the random access point (see Col. 3 lines 9-15 and Col. 8 lines 40-43; Agarwal discloses that his invention allows a user to "seek" or "jump" (random access point request) Agarwal also discloses that the client computer MAY require more data for the presentation than has been transmitted by the server (the examiner understands this to mean

that a determination is made as to whether the requested jump point is stored in the pre roll buffer. If the requested jump point is not stored in the pre roll buffer, sending a request to the server for the requested data starting at that jump point. If the requested jump point is in the buffer then sending a request for only the requested data that is not in the buffer, beginning from the random access point).

Agarwal discloses that the video streaming occurs over a network. Agarwal doesn't specifically disclose that the network is HTTP based or that the HHTP video streaming occurs over a mobile communication system. Aksu, an inventor from the same or a similar field, discloses an HTTP video streaming network with a client/server that occurs over a mobile communication system (see page 1 lines 30-36, page 2 lines 16-18, and page 7 lines 17-18). Aksu's disclosure is used to merely convey that HTTP-based video streaming was known at the time and that the "network" disclosed by Agarwal does not exclude HTTP-based video streaming or mobile communication systems. It would have been obvious to one of ordinary skill at the time the invention was made to modify the invention of Agarwal with the HTTP-Based streaming method of Aksu because it would have made it possible for consumer to stream video over the internet via a mobile communication system without incurring the cost and time associated with setting up a separate dedicated network to stream video to clients with mobile devices that have access to the internet.

Claim 8:

Agarwal and Aksu disclose the method of claim 7 (as discussed previously). Agarwal discloses further comprising a display unit configured to displaying the files from the random access point stored in the memory (see Col. 2 lines 23-25).

Claim 9:

Agarwal and Aksu disclose the method of claim 7 (as discussed previously). Agarwal discloses wherein displaying the content files plays the files after storing the files received from the transmitting server for a prescribed period of time (see Col. 4 lines 1-9; Agarwal discloses a pre-roll buffer for storing files received from the transmitting server for a prescribed period of time before displaying the content files).

Claim 10:

Agarwal and Aksu disclose the method of claim 7 (as discussed previously). Aksu discloses wherein the data stream is reconfigured based on the random access point. (see page 10 lines 9-14; Aksu discloses that the file-level meta-data (moov) file can be repeated within mp4 file to support live streaming, fast forward or backward operations, random access, and other purposes. If a client requests a file and then the client decides to request a random access point that hasn't been downloaded/buffered, the server can configure a new data stream with the file-level meta data inserted at the random access point so that the user doesn't have to wait for the client computer to download all the data from the

original request to the random access point that was chosen to begin viewing from the desired random access point).

Claim 11:

Agarwal and Aksu disclose the method of claim 7 (as discussed previously). Aksu discloses wherein the transmitting server stores the content files as MP4 file form applied by file fragmentation process (see rejection for claim 4).

Claim 12:

Claim 12 is similar in scope to claim 7 and is rejected on the same basis.

3. Claims 13-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal in view of Aksu in further view of Lin et al. (hereinafter referred to as Lin) (US Pat 6,738,980).

Claims 13, 14:

Agarwal and Aksu disclose the method of claim 7 (as discussed previously). Aksu discloses searching the random access point by the transmitting server upon receiving a content file request message and reconfiguring the data stream by setting a new data transmission starting point (the starting point being the random access point) (see page 10 lines 9-14; Aksu discloses that the file-level meta-data (moov) file can be repeated within mp4 file to support live streaming, fast forward or backward operations, random access, and other purposes. If a

client requests a file that starts streaming and then the client decides to request a random access point that hasn't been downloaded/buffered, the server can search the random access point and reconfigure the data stream (and first header) with the file-level meta data inserted at the random access point so that the user doesn't have to wait for the client computer to download all the data from the original request to the random access point that was chosen to begin viewing from the desired random access point.

Aksu also discloses that receiving the reconfigured data stream as at least one TCP packet (see page 1 lines 30-36)

Neither Agarwal nor Aksu disclose setting a new data transmission starting point according to a **screen type** of the random access point.

Lin, an inventor from the same or a similar field, discloses setting a new data transmission starting point according to a **screen type** of the random access point (see Col. 4 lines 19-27; Lin discloses that if the random access point chosen is an I frame, then the server can configure the starting point to be that I frame, however if the random access point chosen is a P frame, then the server needs to adjust the starting point of the stream so that the client receives viewable media). Lin's disclosure is used to merely convey the methods that were used at the time the invention was made in a streaming media server/client network)

It would have been on obvious to one of ordinary skill in the art at the time the invention was made to modify the inventions of Agarwal and Aksu to include adjusting the starting point of an mp4stream according to the frame that falls on the random access point chosen because it would have enabled the viewer not to view the movie at any desired time in the run-time of the movie, even if the chosen point in the run time is a p-frame.

Claim 15:

Agarwal, Aksu, and Lin disclose the method of claim 13 (as discussed previously).

Agarwal, Aksu, and Lin disclose wherein reconfiguring the data stream comprises:

determining whether the random access point is an I-frame or a P-frame; configuring a data transmission starting point and a new media data sample based on the random access point (see rejection of claim 13); and

changing header information of the media data sample including the data transmission starting point (see Aksu Fig. 5a, page 8 lines 34-36, and Annex 1; Aksu discloses changing the header information, including the data transmission

starting point so that the random access function disclosed in his invention can be possible (see the rejection of claim 13).

Claim 16:

Agarwal, Aksu, and Lin disclose the method of claim 13 (as discussed previously).

Aksu discloses wherein the header information comprises:

time information of the media data sample; and meta information corresponding commonly to the respective media data samples of the data stream (see Annex 1 – Sample Table Atom ('stbl') and Movie Atom ('moov').

Claim 17:

Agarwal, Aksu, and Lin disclose the method of claim 15 (as discussed previously).

Aksu discloses wherein changing the header information comprises transmitting the header information included in a header of an original media data sample to a header of the new media data sample, including the data transmission starting point (see page 10 lines 9-14; Aksu discloses that the file-level meta-data (moov) file can be repeated within mp4 file to support live streaming, fast forward or backward operations, random access, and other purposes. If a client requests a

file that starts streaming and then the client decides to request a random access point that hasn't been downloaded/buffered, the server can search the random access point and reconfigure the data stream (including the header) with the file-level meta data inserted at the random access point so that the user doesn't have to wait for the client computer to download all the data from the original request to the random access point that was chosen to begin viewing from the desired random access point. The file-level meta data is the information included in a header of an original media data sample).

Claim 18:

Is similar in scope to claim 13 and is rejected on the same basis.

Claim 19:

Agarwal, Aksu, and Lin disclose the method of claim 15 (as discussed previously). Lin discloses determining whether or not the random access point that is set as the data transmission starting point is the P-frame; searching an I-frame closest to the random access point if the random access point is the P-frame and is not set as the data transmission starting point; and configuring the media data sample by taking the closest I-frame as the data transmission starting point (see Lin Col. 2 lines 15-21 and Col. 6 lines 4-51; Lin discloses sending the closest I frame if the random access point is determined to be a p-frame and is not set as the data transmission starting point (the examiner understands that the p-frame not being the set data transmission starting point to mean that the client

want to "jump" to the general area. This requires less decoding/bandwidth than if the p-frame was the random access point and the data transmission starting point).

Claim 20 and 21:

Agarwal, Aksu, and Lin disclose the method of claim 19 (as discussed previously). Lin discloses the method of claim 19 further comprising:
searching the I-frame closest to the P-frame random access point;
converting the P-frame into a new I-frame by calculating a value of the I-frame closest to the P-frame random access point and a next P-frame; and
repeatedly converting next P-frames into new I-frames und the P-frame random access point, if the P-frame is set as the data transmission starting point (see Lin Col. 6 lines 4-51; Lin discloses converting a P-frame into an I-frame by downloading the closest I frame and corresponding P-frames until the random access P-frame is reached so that a full frame (I-frame version of the chosen random access P frame) can be displayed).

Claim 22:

Claim 22 is similar in scope to claims 13, 15, and 19 and is rejected on the same basis (remote unit is a mobile client, the coincidence is whether the selected random access point is a P-frame or an I-frame and whether the P-frame is the data transmission starting point).

Claim 23:

Claim 23 is similar in scope to claim 5 and is rejected on the same basis.

Claim 24:

Agarwal, Aksu, and Lin disclose the method of claim 23 (as discussed previously).

Aksu discloses wherein the plurality of headers comprises:
a representative header including common meta information of the respective media data samples and time information of a first media data sample; and
at least one segment header including time information of the respective media data samples except the first media data sample (see Fig. 5a, Page 8 line 34-page 9 line 11 and Annex 1; Aksu discloses a representative header including common meta information of the respective media data samples ("file-level meta-data description part") and at least one segment header including time information of the respective media data samples except the first media data sample (segment "Meta-data" x). Annex 1 provides a list of modified MP4 atoms (structured meta data). Time information claimed in claim 24 is inherent to the representative and segment headers disclosed in Aksu's invention).

Claim 25:

Claim 25 is similar in scope to claim 22 and is rejected on the same basis.

Claim 26:

Claim 26 is similar in scope to claim 13 and is rejected on the same basis.

Claim 27:

Claim 27 is similar in scope to claims 19-21 and is rejected on the same basis.

Claim 28:

Claim 28 is similar in scope to claim 24 and is rejected on the same basis.

Claim 29:

Claim 29 is similar in scope to claim 19 and is rejected on the same basis (first header information of the new data stream will be the file-level meta-data description part that is disclosed by Aksu)

Claim 30:

Claim 30 is similar in scope to claims 20 and 21 and is rejected on the same basis (first header information of the new data stream will be the file-level meta-data description part that is disclosed by Aksu)

Claim 31:

Claim 31 is similar in scope to claims 13, 19 and is rejected on the same basis. (If the random access point required by the user is an I frame, then the server will

transmit the I frame, if the random access point required by the user is a P-frame, then the server can send the closes I frame or can convert the P-frame into an I frame using the closest I-frame and corresponding P-frames).

Claim 32:

Agarwal, Aksu, and Lin disclose the method of claim 31 (as discussed previously). Aksu discloses wherein changing the header information comprises transmitting meta information of respective media data stored in a first header before changing to a changed first header (see page 5 line 32- page 6 line 1, and page 10 lines 9-14; Aksu discloses that the file-level meta-data must be present before playback can begin. The meta data of the first header (file level meta data) must be transmitted before changing to a first header (changing the stream to start from a respective random access point).

Claim 33:

Claim 33 is similar in scope to claims 13, 20 and 21 and is rejected on the same basis.

Claim 34:

Claim 34 is similar in scope to claim 32 and is rejected on the same basis.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARI SAWAGED whose telephone number is (571)270-5085. The examiner can normally be reached on Mon-Thurs, 9:00AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sari Sawaged/
Examiner, Art Unit 2623

/Andrew Y Koenig/
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